



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: YANG, TSUN-NEG

SERIAL NO.: 10/715,982

ART UNIT: 2881

FILED: NOVEMBER 18, 2003

EXAMINER: Quash, A.G.

TITLE: ION IMPLANTING APPARATUS

AMENDMENT "A"

Amendment A: CLAIM AMENDMENTS

Please cancel Claims 1 - 13 and substitute Claims 14 - 20 therefor as follows:

Claims 1 - 13 (canceled).

14. (new) An ion implanting apparatus comprising:

a wafer cassette means for loading a plurality of irradiation trays for loading wafers;

an implanting chamber including an implanting base having a two guiding pillars with a guiding trench means for guiding the irradiation tray;

a current integrator electrically connected to said implanting base;

an insulative sleeve having a guiding slot, said two guiding pillars being positioned at two sides of said guiding slot;

a cassette-transforming means for moving said wafer cassette means to a predetermined position; and

a wafer-transferring means for moving the wafer from said wafer cassette means to said implanting base.

15. (new) The ion implanting apparatus of Claim 14, wherein the cassette-transferring means comprises:

a rack positioned on the wafer cassette means;

a gear drivingly connected to the rack through rotation so as to move the wafer cassette means forward; and

a first stepping motor means for driving said gear.

16. (new) The ion implanting apparatus of Claim 15, wherein said cassette-transferring means further comprises a guiding chute means for guiding a moving direction of said wafer cassette means.

17. The ion implanting apparatus of Claim 14, wherein said wafer-transferring means comprises:

a push plate means for moving the wafer from said wafer cassette means to said implanting base; and

a second stepping motor means for driving the push plate means.

18. (new) The ion implanting apparatus of Claim 14, further comprising:

an ion generator means for generating an ion beam;

a mass analysis magnet positioned between said implanting chamber and said ion generator means;

a first multipole moment magnet positioned between said mass analysis magnet and said implanting chamber;

a deflection board positioned between said first multipole moment magnet and said implanting chamber; and

a second multipole moment magnet positioned between said deflection board and said implanting chamber.

19. (new) The ion implanting apparatus of Claim 18, wherein said second multipole moment magnet is a quadrupole moment magnet means for adjusting the direction of the ion beam to be perpendicular to the surface of the wafer.

20. (new) The ion implanting apparatus of Claim 18, further comprising:

a gated vacuum valve positioned between said implanting chamber and said ion generator means; and

an extension tube positioned between said implanting chamber and said gated vacuum valve.